

REMARKS

Claims 1-14 and 18-20 are pending. Claim 1 was amended to be clearer. Claims 3 and 10 were amended to recite the sides of the groove are between 75 and 105° apart as supported at page 5 of the application.

New Claims 17 and 18 are supported at page 8, line 21 and Fig. 4. It is respectfully submitted no new matter is presented by these amendments. Claims 19 and 20 recite substantially 90° as supported at page 5 of the application.

I. 35 USC §102(b)

Claims 1-14 stand rejected under 35 USC §102(b) as being anticipated by Hiai et al. (US 5,865,967). This rejection is respectfully traversed.

The present invention is a method of electro-depositing an envelope of metal on a cathode plate wherein the cathode plate includes a groove that introduces a preferential weakness to the electrodeposited metal. The weakness (frangible portion) facilitates the reliable fracture of the deposited metal envelope into two substantially equivalent and preferably symmetrical sheets. Symmetrical and equivalent sheets provide the advantage that there are reduced difficulties in the stripping process.

In appreciating that copper crystals deposit substantially normally to the surface of a cathode plate, the inventors have determined that a groove in the cathode plate that has a particular shape will form a discontinuity in the crystals at the groove, thereby providing a weakness. The shape of the groove is a balance between allowing growth of the deposited metal in the groove and such that the deposited metal remains within the confines of the groove, whilst still permitting easy separation of the two sheets.

Claim 1 of the present invention defines a method (1) of electro-depositing (2) an envelope (3) of metal (4) on a cathode (5), the envelope including deposited metal on either side (6) of said cathode joined along (7) at least one (8) edge (9) by a frangible portion (10), and being removable (11) from the cathode by rotation (12) of respective sides (13) of the deposited metal envelope about the frangible portion to separate (14) the deposited metal from the cathode into two substantially equivalent sheets (15), the method comprising providing a groove (16) on the cathode plate whereby metal deposited on and adjacent to said groove forms said frangible portion, and wherein the groove is shaped (17) such that a line of weakness (18) is formed (19) in the metal deposited within (20) the groove such that separation (21) of the two sheets of deposited metal is initiated (22) along said line of weakness. US '967 teaches a mother plate (5) having a V-shaped groove (16) used in electro-depositing (2) an envelope (3) of metal (4) on a cathode. However, the citation does not teach that the deposited metal on either side (6) of said cathode be joined along (7) at least one (8) edge (9) by a frangible portion (10).

An essential aspect of US 5,865,967 is coating of the groove with a ceramic coating to shield the edge portion of the plate from electro-deposition to enable the mold plate to be peeled from its mother. (See Abstract, Col. 2, lines 23-27 and Col. 3, lines 13-20).

Also, the reference states, "The present invention is more particularly related to the mother plate having an improved insulating structure for shielding its edge portion from the electrolytic precipitation of metals." (Col. 1, lines 14-17). In this respect US '967 teaches away from the present invention in that US '967 demands a complex and relatively expensive process for coating the groove followed by hydrophobically sealing the pores on the surface of the coating (Col. 3, lines 40-52). In addition, the coating requires polishing and repair after a number of cycles. There is no such

requirement in the present invention and therefore we assert that the present invention is relatively simpler, less time consuming and therefore more cost effective than that taught by the prior art.

Also, while US '967 teaches to employ a V-shaped groove at the edge of the plate, it does so expressly for the purpose of "enhanc[ing] the adherence of the ceramic material" (Col. 3, lines 17-18).

II. Conclusion

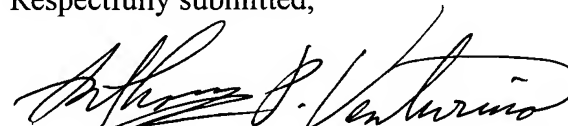
In view of the above, it is respectfully submitted the present claims are neither taught nor suggested by US 5,865,967 and the present invention is novel and inventive over the cited document.

Thus, a Notice of Allowance is respectfully requested.

Respectfully submitted,

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